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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,997	11/03/2003	Mark Levine	930009-2015	5362

20999 7590 04/09/2007
FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK, NY 10151

EXAMINER	
PIZIALI, ANDREW T	
ART UNIT	**PAPER NUMBER**
1771	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,997	LEVINE ET AL.	
	Examiner	Art Unit	
	Andrew T. Piziali	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/16/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16,17,19,20,22-34 and 36-40* is/are pending in the application.

4a) Of the above claim(s) *5,6,25 and 26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-14,16,17,19,20,22-24,27-34 and 36-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/26/2006 has been entered.

Response to Amendment

2. The examiner has withdrawn the rejection of claim 21 based on the cancellation of this claim.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach et al. (hereinafter referred to as Rohrbach).

Regarding claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40, Takagi discloses a conductive fabric comprising a plurality of polymeric filaments having one or more C-shaped grooves formed therein, wherein each filament includes electrically conductive polymer material incorporated as a coating that substantially fills the C-shaped grooves (see entire document including column 1, lines 6-10, column 3, lines 53-64, column 4, lines 8-21 and Figure 1). Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11), therefore, the fabric can at least be compared to a metal-based fabric in terms of conductivity. Considering that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to be resistant to dents and creases.

Takagi does not appear to mention the C-shaped grooves having a mouth with a width less than the central portion of the groove, but Rohrbach clearly discloses that it is known in the multi-lobe polymer fiber art to use C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material inside the filament for increased durability (see entire document including column 1, lines 46-63, column 3, lines 20-27, column 4, lines 5-9, and Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material, as taught by Rohrbach, because the filaments would have increased durability by partially encasing the material within the polymer filament. The C-shaped configuration taught by Rohrbach inherently allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity (see the paragraph bridging pages 5 and 6 of the current specification).

Regarding the fabric being an engineered fabric used in making nonwoven textiles in the airlaid, meltblown or spunbonding processes, considering the substantially identical fabric taught by the applied prior art, compared to the claimed fabric, it appears that the fabric could be used as claimed. It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, Takagi discloses that the filaments may constitute between thirty and one hundred percent of the fabric (column 3, lines 34-39).

Regarding claims 3 and 4, considering that Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11) and that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to have static dissipation properties equivalent to metal-based fabrics while also having physical properties (modulus, tenacity, strength, adhesion, abrasion resistance, and/or durability) comparable to non-conductive synthetic fabrics.

Regarding claims 7-8 and 27-28, Takagi discloses that the filament may have an oriented structure coated with conductive polymer material (column 4, lines 16-21 and Figure 1).

Regarding claims 8 and 28, Takagi discloses that the fibers may be formed by bicomponent spinning, but Takagi does not appear to specifically mention the claimed method of applying conductive polymer. Considering that substantially identical structure illustrated in Figure 1 of Takagi compared to Figure 1 of the current application, it is the examiner's position

that the article of the applied prior art is identical to or only slightly different than the claimed article.

Regarding claims 11-14, 16, 31-34, 36 and 39-40, Takagi discloses that the filament may be lobed monofilament coated with conductive polymer material (see Figure 1).

Regarding claims 12, 32 and 39-40, Takagi discloses that the fabric, and therefore the coating, may have a conductivity of 10^6 to 10^9 Ω (column 5, lines 15-19).

Regarding claims 13-14, 16, 24, 27-28, 31-34, 36 and 40, Rohrbach discloses that shape of the one or more C-shaped grooves may run along a length of the monofilament such that a mechanical interlock forms between the monofilament and the conductive polymer filling the grooves such that the interlock reduces a need for adhesion of the conductive polymer to the monofilament (column 1, lines 46-63).

Regarding claims 16 and 36, the C-shaped configuration taught by Rohrbach inherently allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity and the positioning of the conductive polymer in the grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties (see the paragraph bridging pages 5 and 6 of the current specification).

Regarding claims 17 and 37, Takagi discloses that the degree of surface area coverage of the conductive fiber is preferably 20 to 70% in consideration of processability, manufacturing costs, and conductivity (column 4, lines 40-51), but Takagi does not specifically mention weight percent of conductive polymer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the weight percent of conductive polymer, such as

from 1 to 10%, because it is understood by one of ordinary skill in the art that the weight percent conductive polymer directly affects processability, manufacturing costs, and conductivity and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 19, Takagi discloses that the fabric may be single-layered or multi-layered (column 6, lines 8-14 and Figure 6).

Regarding claim 20, Takagi discloses that the fabric may comprise weft and warp filaments (woven fabric) (column 3, lines 53-64).

Regarding claim 22, Takagi does not specifically mention the claimed use, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed.

5. Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach as applied to claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 above, and further in view of USPN 4,803,096 to Kuhn.

Regarding claims 9-10, 23, 29-30 and 38, Takagi discloses that the conductive polymer may be mixture of a conductive powder with a polymer melt (column 5, lines 38-50), but Takagi does not specifically mention a polyaniline or polypyrrole. Kuhn discloses that it is known in the antistatic fabric art that conductive polymer fibers comprising a mixture of a conductive powder with a polymer may be substituted with polyaniline or polypyrrole conductive polymers to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers (see entire document including column 1, lines 6-66). It would have been obvious to one having

ordinary skill in the art at the time the invention was made to make the conductive polymer material from any suitable conductive polymer material, such as a polyaniline or polypyrrole, to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers and because it is within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claims 10 and 30, considering that Kuhn discloses that polyanilines and polypyrrole do not alter the physical properties of the fibers, and considering that the fiber taught by the prior art is substantially identical to the claimed fibers, it appears that the fibers would have physical properties comparable to a polyamide filament.

6. Claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach in view of USPN 3,842,465 to Sillaots et al. (hereinafter referred to as Sillaots).

Regarding claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40, Takagi discloses a conductive fabric comprising a plurality of polymeric filaments having one or more C-shaped grooves formed therein, wherein each filament includes electrically conductive polymer material incorporated as a coating that substantially fills the C-shaped grooves (see entire document including column 1, lines 6-10, column 3, lines 53-64, column 4, lines 8-21 and Figure 1). Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11), therefore, the fabric can at least be compared to a metal-based fabric in terms of conductivity. Considering that the fibers have a core comprising synthetic material

(paragraph bridging columns 3 and 4), the fabric is considered to be resistant to dents and creases.

Takagi does not appear to mention the C-shaped grooves having a mouth with a width less than the central portion of the groove, but Rohrbach clearly discloses that it is known in the multi-lobe polymer fiber art to use C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material inside the filament for increased durability (see entire document including column 1, lines 46-63, column 3, lines 20-27, column 4, lines 5-9, and Figure 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material, as taught by Rohrbach, because the filaments would have increased durability by partially encasing the material within the polymer filament. The C-shaped configuration taught by Rohrbach inherently allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity (see the paragraph bridging pages 5 and 6 of the current specification).

Takagi does not appear to mention using the fabric for making nonwoven textiles, but Sillaots discloses that it is known in the nonwoven making belt art to use antistatic plastic (see entire document including column 1, lines 6-29). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the conductive fabric to make nonwoven textiles, because the fabric possesses antistatic properties that are desirable in the art.

Regarding claim 2, Takagi discloses that the filaments may constitute between thirty and one hundred percent of the fabric (column 3, lines 34-39).

Regarding claims 3 and 4, considering that Takagi disclose that the conductive fabric has excellent static dissipation properties (column 1, lines 6-11) and that the fibers have a core comprising synthetic material (paragraph bridging columns 3 and 4), the fabric is considered to have static dissipation properties equivalent to metal-based fabrics while also having physical properties (modulus, tenacity, strength, adhesion, abrasion resistance, and/or durability) comparable to non-conductive synthetic fabrics.

Regarding claims 7-8 and 27-28, Takagi discloses that the filament may have an oriented structure coated with conductive polymer material (column 4, lines 16-21 and Figure 1).

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grooves such that the interlock reduces a need for adhesion of the conductive polymer to the monofilament (column 1, lines 46-63).

Regarding claims 16 and 36, the C-shaped configuration taught by Rohrbach inherently allows for continued exposure of the conductive polymer to the filament surface as the monofilament wears so that the filament retains its conductivity and the positioning of the conductive polymer in the grooves shields the polymer and reduces the impact of its lesser abrasion resistance and physical properties (see the paragraph bridging pages 5 and 6 of the current specification).

Regarding claims 17 and 37, Takagi discloses that the degree of surface area coverage of the conductive fiber is preferably 20 to 70% in consideration of processability, manufacturing costs, and conductivity (column 4, lines 40-51), but Takagi does not specifically mention weight percent of conductive polymer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the weight percent of conductive polymer, such as from 1 to 10%, because it is understood by one of ordinary skill in the art that the weight percent conductive polymer directly affects processability, manufacturing costs, and conductivity and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 19, Takagi discloses that the fabric may be single-layered or multi-layered (column 6, lines 8-14 and Figure 6).

Regarding claim 20, Takagi discloses that the fabric may comprise weft and warp filaments (woven fabric) (column 3, lines 53-64).

Regarding claim 22, Takagi does not specifically mention the claimed use, but considering the substantially identical fabric taught by Takagi, compared to the claimed fabric, it appears that the fabric disclosed by Takagi could be used as claimed.

7. Claims 9-10, 23, 29-30 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,432,850 to Takagi in view of USPN 5,744,236 to Rohrbach in view of USPN 3,842,465 to Sillaots as applied to claims 1-4, 7-8, 11-14, 16-17, 19-20, 22, 24, 27-28, 31-34, 36-37 and 39-40 above, and further in view of USPN 4,803,096 to Kuhn.

Regarding claims 9-10, 23, 29-30 and 38, Takagi discloses that the conductive polymer may be mixture of a conductive powder with a polymer melt (column 5, lines 38-50), but Takagi does not specifically mention a polyaniline or polypyrrole. Kuhn discloses that it is known in the antistatic fabric art that conductive polymer fibers comprising a mixture of a conductive powder with a polymer may be substituted with polyaniline or polypyrrole conductive polymers to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers (see entire document including column 1, lines 6-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive polymer material from any suitable conductive polymer material, such as a polyaniline or polypyrrole, to eliminate disadvantageous such as undesirable alteration of the physical properties of the fibers and because it is within the general skill of a worker in the art to select a known material on the basis of its suitability.

Regarding claims 10 and 30, considering that Kuhn discloses that polyanilines and polypyrrole do not alter the physical properties of the fibers, and considering that the fiber taught

by the prior art is substantially identical to the claimed fibers, it appears that the fibers would have physical properties comparable to a polyamide filament.

Response to Arguments

8. Applicant's arguments filed 12/26/2006 have been fully considered but they are not persuasive.

The applicant asserts that the fabric taught by the applied prior art is not an "engineered fabric used in making nonwoven textiles." The examiner contends that considering the substantially identical fabric taught by the applied prior art, compared to the claimed fabric, it appears that the fabric could be used as claimed. It is noted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In addition, Sillaots discloses that it is known in the nonwoven making belt art to use antistatic plastic (see entire document including column 1, lines 6-29). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the conductive fabric to make nonwoven textiles, because the fabric possesses antistatic properties that are desirable in the art.

The applicant asserts the fabric is not capable of withstanding the ravages of the industrial machinery. Applicant's argument is moot because the claim fails to specifically mention the fabric withstanding the ravages of an industrial machine. In addition, the applicant

has failed to show, or attempt to show, that the fabric taught by the applied prior art is incapable of withstanding the ravages of all industrial machines.

The applicant asserts that there is no motivation in the prior art for combining Takagi with Rohrbach. The examiner respectfully disagrees. Rohrbach discloses that it is known in the multi-lobe polymer fiber art to use C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material inside the filament for increased durability. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the C-shaped filaments having a mouth with a width less than the central portion of the groove to entrap material, as taught by Rohrbach, because the filaments would have increased durability by partially encasing the material within the polymer filament.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

atp

3/13/07

ANDREW PIZIALI
PRIMARY EXAMINER